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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,182	02/01/2006	Isabelle Pesterbe	264543US41XPCT	3645

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EXAMINER	
SAVAGE, JASON L	

ART UNIT	PAPER NUMBER
1794	

NOTIFICATION DATE	DELIVERY MODE
10/09/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/522,182	PESLERBE ET AL.	
	Examiner	Art Unit	
	JASON L. SAVAGE	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 January 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20050124*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 25, 28 and 38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 38 is rejected as it recites a method of manufacturing comprising "compacting". However, it is unclear what applicant intends to be compacted. It is noted in the last two lines of claim 39 that applicant recites the layers are formed by a powder metallurgy technique. As such, the claim has been interpreted as meaning powders for forming the core and casing are compacted to make a semi-finished product.

Claims 25 and 28, are rejected since a broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render

a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 25 recites the broad recitation that the first alloy and the second alloy of selected from the same serious of aluminum-based alloys, and the claim also recites in particular they are selected from the 2000 series which is the narrower statement of the range/limitation.

Claim 28 also recites a broad limitation with two different narrower limitations.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 22-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ress, Jr. et al. (US 6,190,133) in view of Bedford (GB 2242848).

Ress teaches a mechanical part such as airfoils comprising a fist material forming a central core zone **23** and a second material forming a peripheral zone casing **22a** that surrounds the core Figure 4 (col. 44-67).

Ress further teaches that the first material core may comprise a matrix metal composite of titanium (col. 1, ln. 5-15). Ress also teaches that the second metal casing material may comprise the same base titanium metal (col. 4, ln. 9-19). However, Ress does not explicitly recite that a metallurgical bond is formed between the two material components however it would have been obvious to have bonded the materials in order to form a strong component structure.

Regarding claim 23, although Ress is silent to the base metal being aluminum, Bedford teaches that various metal matrix composite materials are known to be suitable for use as structural materials including titanium metal matrix composites as well as aluminum metal matrix composites reinforced with silicon carbide (p. 2, lines 12-26). As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the composite part of Ress and employed an equivalent metal matrix material such as reinforced aluminum matrices as taught by Bedford with a reasonable expectation of success.

Regarding claims 24-25, although the prior art does not explicitly recite the use of the claimed aluminum series alloys for the matrix materials, it would have been obvious to one of ordinary skill to have selected aluminum series alloy materials would be suitable for use in the airfoil of Ress as modified by Bedford. Absent a teaching of the criticality or showing of unexpected results, the claimed aluminum series alloys would not provide a patentable distinction over the prior art.

Regarding claim 26, Bedford teaches that the use of silicon carbide with aluminum matrix metals

Regarding claims 27-28, while the prior art does not explicitly recite the claimed reinforcing element content, the selection of a desired content would have been an obvious design choice which would be selected through routine optimization and experimentation.

Regarding claim 29, Ress teaches that the casing is not reinforced and would be made of metal matrix only.

Regarding claim 30, Ress is silent to the second casing material comprising a metal matrix composite, however Bedford teaches that the mechanical part may have a protective outer facing layer which comprises a metal matrix composite (p. 2, ln. 5-19). It would have been within the purview of one of ordinary skill in the art at the time of the invention to have recognized that the inner, outer or both of the surface layers could be selectively reinforced in order to tailor the properties of the mechanical part to be suitable for the application in which it will be used.

Regarding claims 31-34, it would have been obvious to have put a differing proportions of reinforcing particles or to have varied the reinforcing material content so as to tailor the properties of the mechanical part.

Regarding claims 35-37, the prior art teaches the reinforced components are used as turbine component parts such as airfoil blades.

Regarding claims 38-39, forming metal matrix composite articles by powder metallurgy is known in the art. Although Ress teaches forming the outer casing by casting a metal around core, a different method would need to be employed to form the composite having a metal matrix composite outer layer. It would have been obvious to

one of ordinary skill the have employed known methods of forming the metal matrix composite components with a reasonable expectation of success.

Regarding claims 40-42, Ress teaches a first material composite core which extends in a longitudinal direction (figure 5) but it is silent to applying the second material as a sleeve. However, it would have been within the purview of one of ordinary skill the art to have recognized that alternative methods of processing the composite could be employed with a reasonable expectation of success. Absent a teaching of the criticality or showing of unexpected results from the recited processing steps, it would not provide a patentable distinction over the prior art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON L. SAVAGE whose telephone number is (571)272-1542. The examiner can normally be reached on M-F 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on 571-272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason Savage/
10-1-08

/Timothy M. Speer/
Primary Examiner, Art Unit 1794